



**ENGINEERING OPERATIONS COMMITTEE
MEETING MINUTES
AUGUST 4, 2005 – 9:00 A.M.
UPTRAN CONFERENCE ROOM**

Present: L. Tibbits J. Friend J. Polasek
J. W. Reincke M. VanPortFleet J. D. Culp
A. Clover T. Fudaly C. Bleech
E. Burns

Absent: B. J. O'Brien M. Chaput

Guests: B. Krom C. Roberts A. Uzcategui
M. Bott T. Anderson (for M. Chaput)

OLD BUSINESS

1. Approval of the Minutes of the July 7, 2005, Meeting – L. Tibbits

The minutes of the July 7, 2005, meeting were approved with minor corrections.

2. Sign Support Typical Plan VIII-370E, Steel Cantilever Type J and Sign Support Typical Plan VIII-350E, Drilled Shaft Foundation for Cantilever Type J (See July 7, 2005, Meeting Minutes, New Business, Item 2)– A. Uzcategui

It is recommended the committee approve the use of the subject typical plans on M-104, JN 82840, CS 70081, in Ottawa County. This project is scheduled for an October 2005 letting.

ACTION: Recommendation approved.

NEW BUSINESS

1. Wayfinding Signing Guidelines – M. Bott

The lack of guidelines for wayfinding signing has resulted in some signs being placed along state trunklines in some regions and denied in others. For those locations where wayfinding signs have been permitted, there has been a difference in designs and applications that may not be in the best interest of the motorist. These differences are legend height and number of lines of legend. The guidelines adhere to the *Manual of Uniform Traffic Control Devices* regarding these two issues. With the recognition that municipalities will request this type of signing more and more, several region and TSC offices have requested the Traffic and Safety Support Area to develop guidelines.

ACTION: Subject to minor editing revisions, EOC approves the guidelines for distribution.

2. **Heritage Signing Guidelines – M. Bott**

Two issues have been identified by the regions requiring further guidance in response to existing installations. They are sign placement and permitting distinctively designed route signs. Sign placement currently ranges from one sign per direction and at trunkline intersections to signs at every major intersection, side approaches, and the county line. The proposed guidelines limit Heritage Route signs to one per direction and at trunkline intersections, mounting them below the route marker. This proposal aligns placement to match that of route markers.

Sponsors of Heritage Routes have requested distinctively designed route signs in lieu of the standard department sign to provide identification for the route. The proposed guidelines provide for this option with limiting criteria.

ACTION: EOC approves the guidelines for distribution.

3. **Alternate Bidding of Reflective Sound Walls and Absorptive Sound Walls for Sound Walls Along I-94 in Ypsilanti, CS 81063, JN 80842A – L. Herf**

In an effort to create the most competitive bidding situation possible, absorptive and reflective walls are being considered on this project as alternate bid items. The contractor must select either absorptive sound walls or reflective sound walls (but not both) to supply for this project.

The Traffic Noise Model is the current FHWA software for sound analysis. In this software, the user can input a value of 0.0 for the noise reduction coefficient (NRC) representing reflective sound walls, or the user can input an NRC of 0.7 (or more) representing absorptive sound walls. During the sound analysis, it is sometimes obvious that absorptive sound walls yield shorter walls and possibly reducing project costs. For this particular project, the analysis yielded little difference between reflective sound walls and absorptive sound walls. The little difference between the two wall types can be attributed to the site topography and the proposed alignment of the walls.

Even though the analysis yielded little difference between the two types of walls, there is a bidding advantage to allowing both types of walls. Allowing more products for the contractors to choose from can only make bidding more competitive, giving the department a better chance and lower construction costs.

It is recommended that the committee approves the use of both absorptive and reflective sound walls as alternate bid items in the subject project.

ACTION: EOC approved.

4. **Wayne State University Research Report, *A Study of the Effectiveness of the Use of Steady Burn Warning Lights on Drums in Construction Zones* – J. Grossklaus**

The purpose of this study was to evaluate driver behavior in terms of delineation and safety in work zones channelized by drums with and without steady burn warning lights. As a part of this research, two methodologies were used: field observations in actual highway work zone settings, and controlled laboratory experiments using a modern driving simulator. The study evaluated various driver performance measures, including vehicular lateral placement, speed profile, steering reversals, and traffic crash experiences. The statistical analysis performed in the field and driving simulator experiments did not indicate any difference in driver performance and safety measures between work zone traffic control with and without steady burn warning lights on drums.

ACTION: EOC approved the research report for distribution.

5. **Pavement Selections – B. Krom**

A. **I-75 Widening: CS 63172, JN 31673**

The reconstruction alternates considered were: Alternate 1 – a hot mix asphalt (HMA) pavement (Equivalent Uniform Annual Cost [EUAC] \$101,961/mile), and Alternate 2 - jointed plain concrete pavement (JPCP) (EUAC \$92,053/mile).

A life cycle cost analysis was performed and Alternate 2 was approved based on having the lowest EUAC. The pavement design and cost analysis are as follows:

10.5”	Jointed Plain Concrete Pavement w/15’ jt spacing (mainline & shoulders)
6.0”	Open-Graded Drainage Course
	Geotextile Separator
10.0”	Sand Subbase
6.”	Open Graded Underdrain System
26.5”	Total Thickness

Present Value Initial Construction Costs	\$561,709/mile
Present Value Initial User Costs	\$1,015,383/mile
Present Value Maintenance Costs.....	\$49,743/mile
Equivalent Uniform Annual Cost	\$92,053/mile

B. **M-10 Reconstruction: CS 63081 and 82112, JN 72402 and 75229**

The reconstruction alternates considered were: Alternate 1 – HMA pavement (EUAC \$286,772/directional mile), and Alternate 2 – JPCP (EUAC \$236,984/directional mile).

A life cycle cost analysis was performed and Alternate 2 was approved based on having the lowest EUAC. The pavement design and cost analysis are as follows:

10" ...Jointed Plain Concrete Pavement w/15' joint spacing (mainline & shoulders)
6.0" Open Graded Drainage Course (mainline & shoulders)
Geotextile Separator
10.0" Sand Subbase
6" dia. Open-Graded Underdrain System
26" Total Section Thickness

Present Value Initial Construction Costs \$1,201,827/directional mile
Present Value Initial User Costs \$2,878,621/directional mile
Present Value Maintenance Costs \$107,738/directional mile
Equivalent Uniform Annual Costs \$236,984/directional mile

(Signed Copy on File at C&T)

André Clover, Acting Secretary
Engineering Operations Committee

AC:kar

cc:	G. J. Jeff	S. Mortel	J. Steele (FHWA)
	K. Steudle	D. Jackson	R. Brenke (ACEC)
	L. Hank	W. Tansil	G. Bukoski (MITA)
	EOC Members	D. Wresinski	R. J. Risser, Jr. (MCPA)
	Region Engineers	C. Libiran	D. Hollingsworth (MCA)
	TSC Managers	R. J. Lippert, Jr.	J. Becsey (APAM)
	Assoc. Region Engineers	T. L. Nelson	M. Newman (MAA)
	T. Kratofil	T. Phillips	C. Mills (MPA)
	M. DeLong	K. Peters	J. Murner (MRPA)
	B. Kohrman	J. Ingle	G. Naeyaert (ATSSA)
	J. Shinn	C&T Staff	